



GILA RIVER INDIAN COMMUNITY

DEPARTMENT OF ENVIRONMENTAL QUALITY

August 25, 2014

Meredith Kurpius
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San Francisco, CA 94105

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**Re: 2013 GRIC Air Monitoring Network Review
Gila River Indian Community**

Dear Ms. Kurpius:

The Gila River Indian Community (GRIC or Community) Department of Environmental Quality (DEQ) has developed the *2013 Ambient Air Monitoring Network Review* document for the three ambient air quality monitoring sites within the Community. A copy of the document was made available to members of the Community for review. The GRIC DEQ also presented a summary of the information contained document to the members of the Community through district community meetings. The presentations were well received by the Community members. The *2013 Ambient Air Monitoring Network Review* is attached for your review and approval of the recommendations within the document.

If you have any questions please contact me at ryan.eberle@gric.nsn.us or (520) 796-3781.

Sincerely,

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Air Quality Program Manager, GRIC DEQ

Cc w/ attachment: Ondrea Barber, Director GRIC DEQ
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 Michael Flagg, EPA Region 9
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2013 AMBIENT AIR MONITORING NETWORK REVIEW



**Gila River Indian Community
Department of Environmental Quality
Air Quality Air Monitoring Program
August 2014**

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- A Detailed Monitoring Site Information and Photographs
- B District Meeting Presentation Slides

DEFINITION OF TERMS

AQMP:	Air Quality Management Plan. The AQMP is a collection of tribal regulations and plans to achieve healthy air quality under the Clean Air Act. For GRIC, the AQMP is synonymous with the Tribal Implementation Plan (TIP).
AQP:	Air Quality Program within the Gila River Indian Community's Department of Environmental Quality.
AQS:	Environmental Protection Agency's Air Quality System
Attainment:	This refers to the NAAQS used to comply with the federal Clean Air Act. After several years of no violations of the NAAQS, the EPA can classify the area as in attainment for that pollutant.
CFR:	Code of Federal Regulations.
Community:	Gila River Indian Community
Continuous monitoring:	A method of monitoring air pollutants that is continually measuring the quantity of the pollutant, either gaseous or particulate. Continuous monitors can be used to obtain real-time or short-term averages of pollutants.
Criteria Pollutants:	Six pollutants (Carbon Monoxide, Lead, Nitrogen Dioxide, Ozone, Particulates, and Sulfur Dioxide) that have NAAQS established by the US EPA.
DEQ:	Gila River Indian Community's Department of Environmental Quality
Design Value:	A design value is a statistic that describes the air quality status of a given area relative to the level of the NAAQS. For a concentration-based standard, the air quality design value is simply the standard-related test statistic. The design value of a pollutant monitoring network is the highest sample value in the network used to compare to the NAAQS; e.g. the 8-hour ozone design value for the network is the monitor with the highest 3-year average of the 4 th highest concentrations each year.
EPA:	U. S. Environmental Protection Agency.
Exceptional Events:	An uncontrollable event caused by natural sources of pollution or an event that is not expected to recur at a given location. The AQP makes the determination of which events to classify as exceptional

and those events are then flagged in the AQS. If the EPA concurs with the AQP's determination, the measured pollution event will not be used in determination of compliance with the NAAQS.

FEM:	Federal Equivalency Method. An official method, i.e. equipment and procedure, of monitoring air pollution that has been determined to produce results similar to the Federal Reference Method (FRM).
Filter-based Monitor:	A method of monitoring particulate pollution that involves exposing a pre- weighed filter to a specific flow volume of air to capture the particulates in the air. The filters are then post-weighed to determine the weight of particulates per volume, e.g. $\mu\text{g}/\text{m}^3$. Filter-based monitors used by GRIC are all FRM monitors.
FRM:	Federal Reference Method. An official method (i.e. equipment and procedure) of monitoring air pollution that has been tested and determined to produce results that accurately measure air pollution with acceptable precision. These methods are the baseline that all other methods (i.e., FEMs) refer to.
GRIC:	Gila River Indian Community
$\mu\text{g}/\text{m}^3$:	Microgram per cubic meter.
MSA:	Metropolitan Statistical Area. A geographical area designated by the federal government based on the concept of a core area with a large population nucleus, plus adjacent communities having a high degree of economic and social integration with that core. It is unclear in Appendix D 40 CFR 58 how MSAs apply to sovereign tribes. Although the areas within the Community are <i>geographically</i> part of the Phoenix-Mesa-Scottsdale MSA. For purposes of the administration of Section 107 of the Clean Air Act (42 U.S.C. § 7407), except where a specific designation has been otherwise made by the Administrator, the air quality control region for the Community is all land within the exterior boundaries of the Community. Therefore, for the purposes of this document, the MSA principle does not apply to the GRIC Air Monitoring Network.
NAAQS:	National Ambient Air Quality Standards. A health and welfare-based standard that is set by the US EPA to qualify allowable levels of criteria pollutants.
NO_2:	Nitrogen dioxide.
NO_x:	Nitrogen oxides. Sum of nitric oxide (NO), NO_2 , and other nitrogen-containing compounds.
PM:	Particulate matter. Material suspended in the air in the form of

	minute solid particles or liquid droplets.
PM10:	Particulate matter of 10 microns in diameter or smaller.
PPM:	Parts per million.
Primary Standard:	One portion of the NAAQS. These standards are designed to protect the public health.
Secondary Standard:	One portion of the NAAQS. These standards are designed to protect the environment.
SIP:	State Implementation Plan. SIPs are a collection of state and local regulations and plans to achieve healthy air quality under the Clean Air Act.
SLAMS:	State and Local Air Monitoring Station. The SLAMS consist of a network of approximately 5,000 monitoring stations nationwide whose size and distribution is largely determined by the needs of State, and local air pollution control agencies to meet their respective SIP requirements. The GRIC monitors operated by the AQP are not part of the SLAMS network, but the AQP operates the monitors in accordance with the requirements for SLAMS.
TEOM:	Tapered Element Oscillating Microbalance. A continuous particulate measuring instrument used by the AQP to measure PM10.
TIP:	Tribal Implementation Plan. The TIP is a collection of tribal regulations and plans to achieve healthy air quality under the Clean Air Act. For GRIC, the TIP is incorporated into and synonymous with the Air Quality Management Plan (AQMP).
VOC:	Volatile organic compounds. VOCs are chemical compounds that can easily vaporize and enter the atmosphere. There are many natural and artificial sources of VOCs; solvents and gasoline make up some of the largest artificial sources. VOCs will react with NO _x in the presence of sunlight to create ground-level ozone pollution.

1 INTRODUCTION

The Code of Federal Regulations (CFR) Title 40 Part 58.10 (40 CFR 58.10) requires an annual monitoring network plan to summarize the air quality surveillance system consisting of State and Local Air Monitoring Stations (SLAMS) and Special Purpose Monitors (SPM) operated under state and local authorities. The annual monitoring network plan must identify the purpose of each monitor and provide evidence that both the siting and the operation of each monitor meet the requirements in 40 CFR Part 58 appendices A, C, D, and E below:

- Appendix A Quality Assurance Requirements for SLAMS, SPMs, and PSD (Prevention of Significant Deterioration) Air Monitoring
- Appendix C Ambient Air Quality Monitoring Methodology
- Appendix D Network Design Criteria for Ambient Air Quality Monitoring
- Appendix E Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring

The Gila River Indian Community (GRIC or Community) Department of Environmental Quality (DEQ) Air Quality Program (AQP) operates air quality monitors that record ambient concentrations of two criteria pollutants - particulate matter less than or equal to 10 microns (PM10) and ozone. Criteria pollutants are those that the United States Environmental Protection Agency (EPA) has defined as a potential risk to health, and correspondingly defined a National Ambient Air Quality Standard (NAAQS). The NAAQS are intended to protect public health and welfare by setting limits on the allowable level of each pollutant in the ambient air. The other criteria pollutants with established NAAQS that are not monitored by the AQP are particulate matter less than or equal to 2.5 microns (PM2.5), carbon monoxide (CO), sulfur dioxide (SO2), nitrogen dioxide (NO2), and lead (Pb).

The GRIC air quality monitors are tribal monitors and are most closely related to SLAMS monitors. The United States Environmental Protection Agency (EPA) works closely with GRIC to adhere to the requirements for SLAMS networks with appropriate flexibility as stated in the Tribal Authority Rule (TAR).

The purpose of this document is to fulfill the requirements of 40 CFR 58.10, and has been prepared in accordance with EPA Region 9's *Annual Monitoring Network Plans* Memorandum dated May 8, 2012. Therefore, this document contains the following sections:

- **Air Monitoring Network Design** – Describes the design requirements for an air monitoring network in accordance with Appendix D of 40 CFR 58.
- **GRIC Air Monitoring Network** – Describes the air monitoring network for the Community including monitor types, background information, summary of 2013 monitoring results, changes to the monitoring network in 2013, and proposed changes to the monitoring network.
- **Compliance Discussion** – Includes a discussion of compliance with 40 CFR 58, including a cross-reference table of requirements for Network Review, minimum monitoring requirements, precision and accuracy certifications, data submittals, and audits.

- **Public Notice** – Includes information on public notices and community outreach for review and presentation of this document.
- **Appendices** – Contains the detailed monitoring site information and photographs, and a copy of the presentation that was prepared for the District meetings.

2 AIR MONITORING NETWORK DESIGN

2.1 Monitoring Objectives

Appendix D of 40 CFR 58 states that monitoring networks must be designed to meet three basic monitoring objectives:

1. Provide air pollution data to the general public in a timely manner;
2. Support compliance with ambient air quality standards and emissions strategy development; and
3. Support air pollution research studies.

Furthermore, Appendix D states that in order to support air quality management work indicated in the three basic objectives above, monitoring networks must be designed with a variety of the following types of monitoring sites:

- Highest Concentration – Sites to determine the highest concentration expected to occur in the area covered by the network;
- Population Exposure – Sites to determine representative concentrations in areas of high population density;
- Source Impacts – Sites to determine the impact on ambient pollution levels of significant sources or source categories;
- Background Concentrations – Sites to determine general background concentration levels;
- Regional Transport – Sites to determine the extent of regional pollutant transport among populated areas, and in support of secondary standards; and
- Welfare Impacts – Sites to determine the welfare-related impacts in more rural and remote areas (such as visibility impairment and effects on vegetation).

2.2 Spatial Scales

The goal in designing a monitoring network is to establish monitoring stations that will provide data to meet the above monitoring objectives. The physical siting of the air monitoring station must achieve a spatial scale of representativeness that is consistent with the monitoring site type, air pollutant to be measured, and the monitoring objective. The spatial scale results from the physical location of the site with respect to the pollutant sources and categories by estimating the size of the area surrounding the monitoring site that experiences uniform pollutant concentrations. The categories of spatial scale are:

- Microscale - An area of uniform pollutant concentrations ranging from several meters up to 100 meters.
- Middle Scale – Uniform pollutant concentrations in an area of about 110 meters to 0.5 kilometer.

- Neighborhood Scale – An area with dimensions in the 0.5 to 4 kilometer range.
- Urban Scale – Citywide pollutant conditions with dimensions of from 4 to 50 kilometers.
- Regional Scale – An entire rural area of the same general geography (that ranges from tens to hundreds of kilometers).

The appropriate spatial scale for each of the monitoring site types is shown in Table 2-1.

Table 2-1. Relationship Among Monitoring Site Types And Scales Of Representativeness.

Monitoring Objective	Appropriate Spatial Scale				
	Micro	Middle	Neighborhood	Urban	Regional
Highest concentration	X	X	X	X	
Population Exposure			X	X	
Source Impacts	X	X	X		
Background Concentrations			X	X	X
Regional Transport				X	X
Welfare Impacts				X	X

3 GILA RIVER INDIAN COMMUNITY AMBIENT AIR MONITORING NETWORK

3.1 General

There are currently three permanent ambient air monitoring stations within the Community – St. Johns, Casa Blanca, and Sacaton (see Figure 1). All three monitoring stations are tribal monitors, but follow the requirements of SLAMS networks with appropriate flexibility as stated in the TAR.

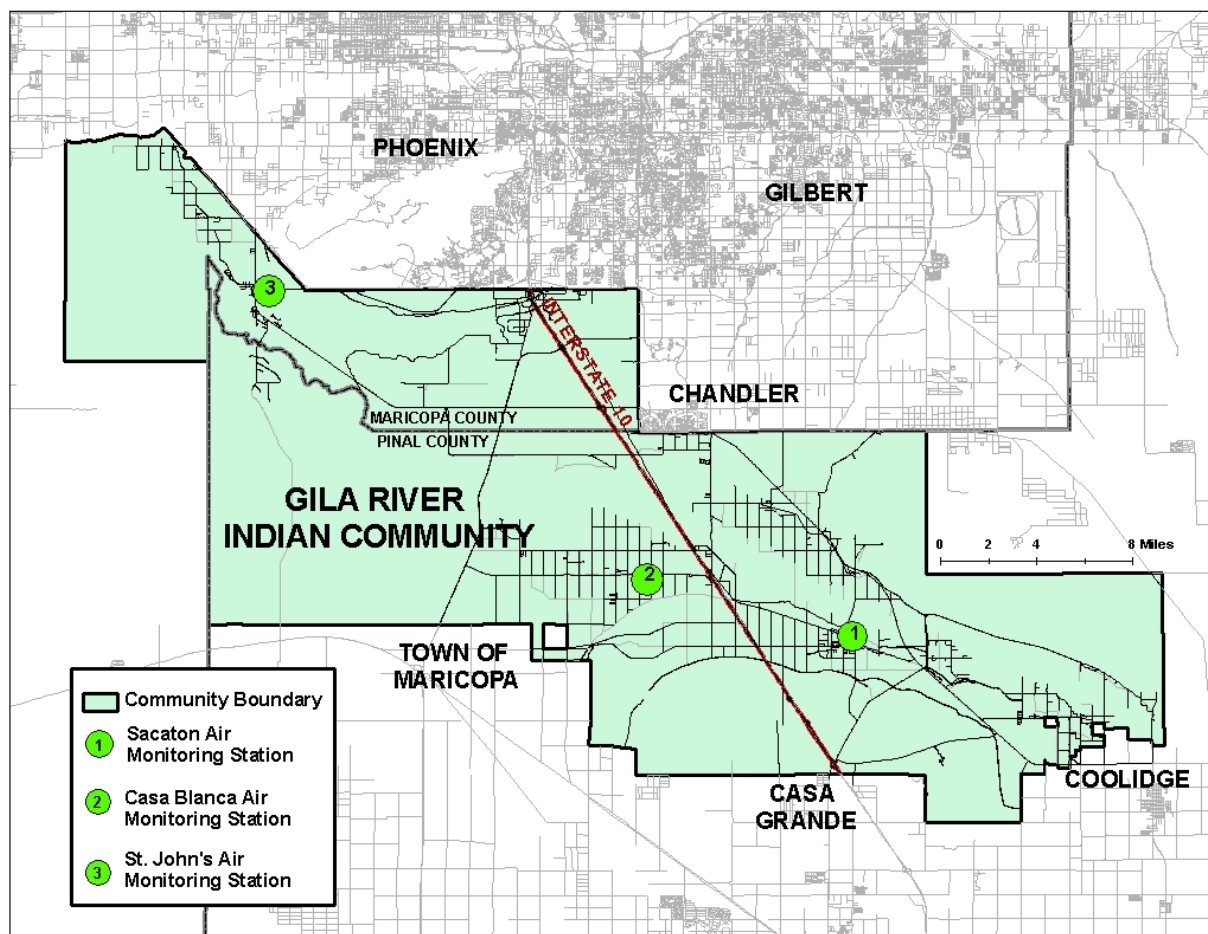


Figure 3-1: Map of Ambient Air Monitoring Stations on Gila River Indian Community

Table 3-1 lists these stations and the pollutant and meteorological parameters that are monitored at each location.

Table 3-1. Ambient Air Quality Parameters Monitored at Each Station

Parameter	Monitoring Station		
	St. Johns	Casa Blanca	Sacaton
Ozone	X		X
PM10 (FRM)		X	
PM10 (TEOM)	X	X	X
Wind Speed	X	X	X
Wind Direction	X	X	X
Ambient Temperature	X	X	X
Ambient Barometric Pressure	X	X	X
Precipitation	X	X	X
Relative Humidity	X	X	X
Camera (Visibility)		X	
Table Notes: PM10 - Particulate Matter ≤ 10 microns FRM - Federal Referenced Method, Filter-based sampler (two samplers – 1-in-3 day and 1-in-6 day, 24 hour average) TEOM - Tapered Elemental Oscillating Microbalance. Continuous measuring monitor (1 hr averages).			

Table 3-2 shows the National Ambient Air Quality Standards (NAAQS) for pollutants that are currently monitored by GRIC, including ozone and particulate matter equal to and less than 10 microns (PM10). Additional pollutants for which EPA has established NAAQS and that are not currently monitored by GRIC include sulfur dioxide, nitrogen dioxide, carbon monoxide, PM2.5, and lead. EPA periodically reviews and revises these standards based on new public health and scientific information. These revisions often require changes to air monitoring networks and methodologies.

Table 3-2. National Ambient Air Quality Standards Monitored for Pollutants by GRIC

Pollutant	Primary/ Secondary	Averaging Time	Level	Form
Ozone	primary and secondary	8-hour	0.075 ppm	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
PM10	primary and secondary	24-hour	150 $\mu\text{g}/\text{m}^3$	Not to be exceeded more than once per year on average over 3 years

The site types represented by each air quality monitor are shown in Table 3-3.

Table 3-3. Site Types for Each Monitoring Station

Site Type	Ozone		Particulate Matter <10 Microns (PM10)		
	St. Johns	Sacaton	St. Johns	Casa Blanca	Sacaton
Highest Concentration					
Population Exposure			X	X	X
Source Impacts				X	
Background Concentrations	X	X	X	X	X
Regional Transport	X	X	X	X	X
Welfare Impacts					

Detailed site information for each of the monitoring locations is presented in Tables A-1, A-2, and A-3 in Appendix A.

3.2 Ozone Monitoring Network

Beginning in 2002, the Community started monitoring for ozone at two locations - one in Sacaton (District 3) and one in St Johns (District 6). In 2013, both ozone monitors were reported as operational in AQS. Per an exemption granted by EPA to the annual ozone monitoring requirement, these monitors were only operated during ozone season (April to October 2013).

3.2.1 Background

The following subsections provide background information on the two ozone monitoring locations. Additional detailed information for each monitor is provided in Appendix A.

3.2.1.1 Sacaton

Operated by the AQP since 2002, this site provides background and regional transport ozone monitoring on a regional scale. This site is located near the central GRIC government and business district of Sacaton, which includes four schools and a community hospital. It also provides a measurement of representative area ozone concentration for the community of Sacaton and surrounding areas. The monitor generally measures background levels of ozone during prevailing West or East winds. However, under the right wind conditions, the monitor can also detect ozone and ozone precursor transport from the Phoenix Metropolitan Area (PMA), north of the Community, in the form of elevated ozone readings. Measured concentrations at this site are often similar to those recorded at Pinal County's Casa Grande monitor (approximately 9 miles south of Sacaton).

3.2.1.2 St Johns

Initially operated by the AQP at Vee Quiva Casino (AQS ID 7002) in 2002 and then relocated 2 miles south to Gila Crossing Middle School (AQS ID 7003) in September 2004. This site is

located in District 6 on the southwest side of the South Mountain Range near the City of Phoenix and provides background and regional transport ozone monitoring on a regional scale. Ozone concentrations at this site exhibit strong diurnal fluctuations caused by oxides of nitrogen (NO_x) from nearby neighboring jurisdictions in the City of Phoenix. The monitor generally measures background levels of ozone during prevailing West or East winds. However, under the right wind conditions, the monitor can also detect ozone and ozone precursor transport from the PMA, north and east of the monitor location, in the form of elevated ozone readings.

3.2.2 2013 Monitoring Results Summary

The 1-hour average ozone standard was revoked by the EPA on June 15, 2005, and has been replaced by the 8-hour average standard for compliance purposes. On March 12, 2008, the EPA lowered the eight-hour ozone NAAQS from 0.080 to 0.075 ppm. Compliance with the standard is determined by averaging the 4th highest eight-hour average over a three-year period. This three-year average must be less than or equal to 0.075 ppm.

There was one exceedance of the 8-hour primary standard (NAAQS) for ozone in 2013. Table 3-4 presents the four highest 8-hour average ozone readings for each monitor during the 2013 monitoring season (April – October).

Table 3-4. 2013* 8-Hour Average Ozone Summary

Site	Max (PPM) Date	2nd High (PPM) Date	3rd High (PPM) Date	4th High (PPM) Date	Number of Days >0.075
Sacaton	0.076 7/17/2013	0.067 5/2/2013	0.066 5/13/2013	0.065 5/12/2013	1
St Johns	0.075 7/17/2013	0.071 7/18/2013	0.070 5/2/2013	0.068 5/12/2013	0
Table Notes: * - Ozone monitors only operate during ozone season (April through October)					

In 2013, there were no violations of the 8-hour average NAAQS for ozone (the 8-hour average NAAQS for ozone is violated when the three-year average of the fourth highest values for each year is greater than 0.075 ppm). The fourth highest 8-hour average ozone reading for each of the past three years and the 3-year average is shown in Table 3-5.

Table 3-5. Three-Year* Average of 8-Hour Ozone

Site	2011 4 th High (PPM)	2012 4 th High (PPM)	2013 4 th High (PPM)	3-Year Average of 4 th High (PPM)
Sacaton	0.073	0.072	0.065	0.070
St Johns	0.072	0.072	0.068	0.070
Table Notes: * - Ozone monitors only operate during ozone season (April through October)				

3.3 PM₁₀ Particulate Monitoring Network

Beginning in 2002, the Community started monitoring for PM₁₀ at one location (Casa Blanca) using a Federal Reference Method (FRM), filter-based, monitor operating on a 1-in-3 day schedule. In 2013, the Community began continuous monitoring for PM₁₀ at all three monitoring stations (St. Johns, Casa Blanca, and Sacaton) using Federal Equivalent Method (FEM) Tapered Element Oscillating Microbalance (TEOM) monitors that provide hourly PM₁₀ averages. In 2013, all three TEOM and both FRM monitors were reported as operational in AQS.

3.3.1 Background

The following subsections provide background information on the three PM₁₀ monitoring locations. Additional detailed information for each monitor is provided in Appendix A.

3.3.1.1 Casa Blanca

This site has been operated by the AQP since 2002. This monitoring site is a neighborhood scale and representative of particulate concentrations in District 5, Casa Blanca. The site consists of two collocated FRM samplers (two identical monitors that sample separately) and one TEOM monitor, providing important precision measurements for the PM₁₀ monitoring program.

This monitoring site was originally placed in one of the three most populated areas of the Community to measure source impacts from agricultural areas. Although located in a neighborhood of agricultural operations, it can be representative of other areas beyond the local jurisdictions. This monitoring station is located approximately 4 to 5 miles northeast of other PM₁₀ sources (e.g., agricultural areas and dairy operations) that are outside of the Community's boundaries and control, and may be influenced by PM₁₀ generated from those sources.

3.3.1.2 Sacaton and St Johns

These two sites started reporting PM₁₀ data to the AQS database beginning January 1, 2013. Both sites are currently set up to monitor PM₁₀ concentrations using continuous TEOM monitors. These two sites have been approved for monitoring and reporting as established within the GRIC Quality Assurance Project Plan (QAPP).

3.3.2 2013 Monitoring Results Summary

The 24-hour Primary standard for PM₁₀ is 150 µg/m³ (155 µg/m³ with mathematical rounding). This standard is violated when the expected number of exceedances at a monitor is more than one per year on average over three years. A formula, as detailed in 40 CFR 50, is used to determine the expected number of exceedances. The formula takes into account the number of days sampling occurred and the number of valid samples collected. A 3-year average of these estimated days is then used to determine compliance.

There were 14 exceedances of the 24-hour primary standard (NAAQS) for PM₁₀ in 2013.

However, GRIC has flagged all 14 of the exceedances as *exceptional events* (see Definitions of Terms). In accordance with the EPA's exceptional events policy, once approved these data are not used in determining compliance with the NAAQS. Table 3-6 presents a summary of the 24-hour average PM10 readings for each monitor in 2013.

Exceedances of the 24-hour PM10 NAAQS at the GRIC monitors also occurred in 2011 and 2012 and were flagged as Exceptional Events by GRIC. The EPA has not issued an official concurrence with the 2011 and 2012 data. Therefore, a determination of compliance with the 24-hour PM10 NAAQS cannot be made at this time.

Table 3-6. 2013 24-Hour Average PM10 Summary

Site Name (Monitor Type)	24-hr Average Max (µg/m3)	24-hr Average 2nd High (µg/m3)	Number of 24-hr NAAQS Exceedances	Expected Exceedances (Including Exceptional Events)	Annual Average (µg/m3)	No. of Exceptional Events	No. of valid days / days possible
Sacaton (TEOM)	315* 5/3/2013	251* 4/8/2013	5*	5.4	39	5	342 / 365
St Johns (TEOM)	257* 4/8/2013	216* 8/26/2013	4*	4	29	4	358 / 365
Casa Blanca (FRM –POC1)	253* 6/30/2013	120 8/26/2013	1*	3	52	1	114 / 122
Casa Blanca (FRM-POC2)	106 5/4/2013	102 7/15/2013	0	0	42	0	55 / 62
Casa Blanca (TEOM-POC3)	329* 4/8/2013	242* 6/30/2013	4*	4	44	4	359 / 365
* Data has been flagged by GRIC as an Exceptional Event							

3.4 Changes to the Network in 2013

The following changes were made to the monitoring network in 2013:

- The GRIC QAPP for PM10 was conditionally approved in January 2013. The GRIC Air Monitoring Network officially started monitoring for PM10 at all three sites which are continuous, hourly TEOM monitors.
- GRIC continues to monitor hourly ozone at Sacaton and St Johns sites. The ozone monitoring instruments were upgraded to the latest model by same manufacturer in March 2014 (beginning of GRIC 2014 Ozone Monitoring Season)

3.5 Proposed Network Changes and Improvements

The following monitoring network changes are proposed for the next 18 months (July 2014 – December 2015):

- The AQP is currently upgrading the air monitoring network's data management system and reporting functions for AQS. This change is scheduled to be completed by December 2014.
- The AQP is currently assessing the need for the FRM PM10 filter-based samplers at the Casa Blanca Site now that the continuous PM10 TEOM monitor is operating at this site.
- The AQP moved office buildings, so the building where the monitoring equipment is located (Sacaton) is no longer occupied. The AQP is in the planning process for the relocation of the Sacaton monitoring equipment into a more secure structure/environment that will be located near the existing equipment location. The relocation of the Sacaton monitoring equipment is currently scheduled for 2015.
- The AQP is also in the process of procuring and installing a remote visibility camera to be collocated with the Sacaton monitoring equipment. The installation of this system is scheduled to be completed by September 30, 2014.

4 COMPLIANCE DISCUSSION

In accordance with 40 CFR 58.10(a)(1), the following sections provide information on compliance with the requirements of Appendices A, C, D, and E of 40 CFR 58. A cross-reference of the requirements of Appendices A, C, D, and E of 40 CFR 58 and the section(s) of this report that address those requirements is included in Table 4-1 below.

Table 4-1. Cross-Reference of 40 CFR 58 Requirements

40 CFR 58 Appendix	Requirement	Response
A	Were Precision/Accuracy reports submitted to AQS for data year covered by the plan?	Yes (see Section 4.2)
	Was an annual data certification package submitted for the data year covered by the plan?	Yes (see Section 4.2)
	What was the frequency of flow rate verification for manual (FRM) PM sampler audits?	Monthly (See Appendix A)
	What was the frequency of flow rate verification for automated PM analyzer audits?	Bi-Weekly (See Appendix A)
	What was the frequency of one-point QC checks for gaseous instruments?	Bi-Weekly (See Appendix A)
	When was the last Annual Performance Evaluation conducted for gaseous instruments?	See Appendix A Tables A-1 & A-3
	When were the last two semi-annual flow rate audits for PM monitors?	See Section 4.4
	When did PEP audits occur during the data year covered by the plan?	See Section 4.4
	When did NPAP audits occur during the data year covered by the plan?	4/16/13
C	What is the instrument manufacturer and model used for each monitor?	See Appendix A
	What is the start date of each monitor?	See Appendix A
D	What is the sampling season for each parameter?	See Sections 3.2 & 3.3
	Does the network meet minimum number of monitors required?	Yes (see Section 4.1)
E	For each site: <ul style="list-style-type: none"> Distance from nearest road in meters? Traffic count of nearest road? Surrounding groundcover (e.g. paved, vegetated, gravel, etc.)? 	See Appendix A
	For each monitor: <ul style="list-style-type: none"> Probe height in meters? If applicable, distance from the nearest supporting structure in meters? If applicable, distance from the nearest obstruction on the roof in meters? If applicable, distance from the nearest obstruction not on the roof in meters? Nearest distance from an obstructive tree in meters? If applicable, distance from the nearest furnace or incinerator flue in meters? If applicable, distance between collocated monitors? Unrestricted airflow in degrees? Probe material for reactive gases (i.e. O₃, NO₂, and SO₂)? Residence time for reactive gases? 	See Appendix A

4.1 Minimum Monitoring Requirements

Tables D-2 and D-4 in Appendix D of 40 CFR Part 58 define minimum monitoring requirements for ozone and PM10, respectively. Tables D-2 and D-4 are reproduced as Tables 4-2 and 4-3, respectively, below. The minimum monitoring requirements are based on the population of the Metropolitan Statistical Area (MSA) and the design value for each NAAQS.

Table 4-2. Ozone Monitoring Requirements for SLAMS (Number of Stations per MSA)

MSA Population	Most recent 3-year design value ≥85% NAAQS (≥ 0.0638)	Most recent 3-year design value <85% NAAQS (< 0.0638)
>10 million	4	2
4-10 million	3	1
350,000-<4 million	2	1
50,000-<350,000	1	0

Table 4-3. PM10 Monitoring Requirements for SLAMS (Number of Stations per MSA)

MSA Population	High concentration Exceeds NAAQS by 20% or more (>180 µg/m ³)	Medium concentration >80% of NAAQS (>120 µg/m ³)	Low concentration < 80% of NAAQS (<120 µg/m ³)
>1,000,000	6-10	4-8	2-4
500,000-1,000,000	4-8	2-4	1-2
250,000-500,000	3-4	1-2	0-1
100,000-250,000	1-2	0-1	0

It is unclear in Appendix D 40 CFR 58 how MSAs and the minimum monitoring requirements in Tables D-2 and D-4 (Tables 4-2 and 4-3) apply to sovereign tribes. Although the areas within the Community are *geographically* part of the Phoenix-Mesa-Scottsdale MSA. For purposes of the administration of Section 107 of the Clean Air Act (42 U.S.C. § 7407), except where a specific designation has been otherwise made by the Administrator, the air quality control region for the Community is all land within the exterior boundaries of the Community. Therefore, for the purposes of this document, the AQP is using the data in Tables D-2 and D-4 as guidance.

The design value is a calculated value based upon the highest recorded concentration at a site in the attainment or nonattainment area. The process for computing the design value for each criteria pollutant is described in the appendices of 40 CFR Part 50. For the purpose of this document, the design values listed are the highest calculated concentrations recorded in the Community.

The minimum monitoring requirements of 40 CFR 58 Appendix D for the ozone and PM10 monitors within the Community are presented in Tables 4-4 and 4-5, respectively. The GRIC Air Quality Management Plan (AQMP) does not require a minimum number of monitors for the Community.

Table 4-4. Minimum Monitoring Requirements for GRIC Ozone Monitors

MSA	Monitor Site: County	Population (GRIC Census 2013)	8-hour Design Value for 2011-2013 (ppm)	Site (AQS ID)	Minimum Monitors Required	Number of Active Monitors	Monitors Needed
NA ¹	St. Johns: Maricopa Sacaton: Pinal	21,277	0.070	St. Johns (04-013-7003)	0 ^A	2	0
			0.070	Sacaton (04-021-7001)			

Table Notes:

1. It is unclear in Appendix D 40 CFR 58 how MSAs apply to Tribal agencies. Although the areas within the Community are *geographically* part of the Phoenix-Mesa-Scottsdale MSA, for purposes of the administration of Section 107 of the Clean Air Act (42 U.S.C. § 7407), the air quality control region for the Community is all land within the exterior boundaries of the Community. Therefore, for the purposes of this document, the MSA is not applicable to GRIC.
- A. A 3-year design value greater than 0.0638 would require one monitor for a population between 50,000 and 350,000 (smallest population group in Table 4-2). Since the GRIC population is below the lowest population range in Table 4-2 and Tribal requirements are unclear, the minimum monitoring requirements was assumed to be zero. For comparison, the population of the Phoenix-Mesa-Scottsdale MSA in 2010 was 4,192,887 (according to the 2010 census), which would require a minimum of 3 monitors.

Table 4-5. Minimum Monitoring Requirements for GRIC PM10 Monitors

MSA	Monitor Site: County	Population (GRIC Census 2013)	Max Concentration ($\mu\text{g}/\text{m}^3$)	Site (AQS ID)	Minimum Monitors Required	Number of Active Monitors	Monitors Needed
NA ¹	St. Johns: Maricopa Casa Blanca: Pinal Sacaton: Pinal	21,277	329 ^A	Casa Blanca (04-021-7004 POC3)	0 ^C	5 ^D	0
			143 ^B	Sacaton (04-021-7001 POC1)			

Table Notes:

1. It is unclear in Appendix D 40 CFR 58 how MSAs apply to Tribal agencies. Although the areas within the Community are *geographically* part of the Phoenix-Mesa-Scottsdale MSA, for purposes of the administration of Section 107 of the Clean Air Act (42 U.S.C. § 7407), the air quality control region for the Community is all land within the exterior boundaries of the Community. Therefore, for the purposes of this document, the MSA is not applicable to GRIC.
- A. Max concentration including data flagged as exceptional events
- B. Max concentration excluding data flagged as exceptional events
- C. A maximum concentration greater than 180 $\mu\text{g}/\text{m}^3$ would require 1-2 monitors for a population between 100,000 and 250,000 (smallest population group in Table 4-3). A maximum concentration between 120 and 180 $\mu\text{g}/\text{m}^3$ would require 0-1 monitors for a population between 100,000 and 250,000. Since the GRIC population is below the lowest population range in Table 4-3 and Tribal requirements are unclear, the minimum monitoring requirements was assumed to be zero. For comparison, the population of the Phoenix-Mesa-Scottsdale MSA in 2010 was 4,192,887 (according to the 2010 census), which would require a minimum of 6-10 monitors for maximum concentrations >180 $\mu\text{g}/\text{m}^3$ and 4-8 monitors for maximum concentrations between 120 and 180 $\mu\text{g}/\text{m}^3$.
- D. Three of the five monitors are collocated at one site (Casa Blanca).

Based on the information contained in Tables 4-4 and 4-5, the GRIC monitoring network meets the minimum monitoring requirements for all criteria pollutants measured (i.e., ozone and PM10) as established in 40 CFR 58 Appendix D, Tables D-2 and D-4.

4.2 Data Submission Requirements

Federal regulations (Appendix A of 40 CFR 58 and 40 CFR 58.15) require air monitoring

organizations to submit precision and accuracy data for the data reported to the federal database. The air monitoring precision and accuracy data for the GRIC monitors are submitted to the USEPA AIRS/AQS database on a quarterly basis and are up to date as of the publication of this report.

Federal regulations (40 CFR 58.15) also require the air monitoring organization to annually submit a letter certifying that data has been submitted for that year to the EPA AIRS/AQS database and that the data accurately represents the air quality in the Community. The AQP certified and submitted the 2013 ozone and PM10 data for the Community to USEPA Region 9 Administrator on April 23, 2014 via Email and FedEx Letter Delivery.

4.3 Air Quality Data

All of the GRIC ambient air monitoring stations are registered with the EPA and regularly report NAAQS criteria pollutant data to the EPA's Air Quality Systems (AQS) database. The data generated at these stations are public information and are available in various formats from the respective agencies. Table 4-6 below lists some popular sources for air quality data.

Table 4-6. Sources of Ambient Air Quality Data

Agency	Address For Data Requests	Email / Internet address	Data Available
GRIC DEQ AQP	P.O. Box 97 Sacaton, AZ 85147 attn: Ondrea Barber, Director	Ondrea.Barber@gric.nsn.us	GRIC Air Monitoring Data
United States Environmental Protection Agency	Ariel Rios Building 1200 Pennsylvania Avenue, N.W. Washington, DC 20460	www.epa.gov www.epa.gov/ttn/airs/airsaqs/index	National Air Monitoring Data, including GRIC data

4.4 Audits

The AQP performed audits of the monitoring equipment in 2013. The monthly audit dates for the ozone monitors are shown in Table 4-7, the semi-annual audit dates for the FRM filter-based PM10 monitors are shown in Table 4-8, and the monthly audits dates for the continuous TEOM PM10 monitors are shown in Table 4-9.

Table 4-7. Monthly Audit Dates for Ozone Monitors

Site	AQS ID	Parameter	2013 Audit Dates ¹
Sacaton	04-021-7001	Ozone	4/15, 4/18, 5/30, 6/25, 7/16, 9/5, 9/16, 10/8, 11/1
St Johns	04-013-7003	Ozone	5/30, 6/25, 7/17, 9/5, 9/16, 9/27, 10/8, 11/1
Table Notes: 1. Ozone monitors are only operated during ozone season (April through October)			

Table 4-8. Semi-Annual Flow Rate Audit Dates for Filter-Based PM10 Monitor

Site	AQS ID	Parameter	2013 Audit Dates
Casa Blanca (Primary)	04-021-7004 POC1	PM10	4/26, 7/31, 12/17
Casa Blanca (Collocated)	04-021-7004 POC2	PM10	4/26, 7/31, 12/17

Table 4-9. Monthly Flow Rate Audit Dates for Continuous TEOM PM10 Monitor

Site	AQS ID	Parameter	2013 Audit Dates
Sacaton (TEOM)	04-021-7001	PM10	1/30, 4/25, 8/1, 9/5, 9/23, 12/19
St Johns (TEOM)	04-013-7003	PM10	1/29, 2/27, 4/26, 9/5, 9/23, 12/17
Casa Blanca (TEOM)	04-021-7004 POC3	PM10	1/29, 2/27, 4/26, 7/31, 9/5, 9/23, 12/17

5 PUBLIC NOTICE

In accordance with 40 CFR 58.10, the annual monitoring network plan must be made available for public inspection (website, hardcopy posting in libraries and public offices, and/or newspaper listing) for at least 30 days prior to submission to EPA. If an opportunity for public comment had been provided, comments received must be included in the annual network plan submission.

The Gila River Indian Community DEQ made a draft copy of this Network Review available to the public on May 16, 2014. In an effort to notify the public of the Network Review, the AQP published information through the following outlets:

- Public Notice posted in the Gila River Indian Newspaper, a newspaper of general circulation in Gila River Indian Community.
- Presentations at Community District Meetings.

5.1 News Release

The following news release was advertised in the Gila River Indian Newspaper, VOL. 17, No. 10 Edition (dated May 16, 2014):

PUBLIC NOTICE OF AMBIENT AIR MONITORING NETWORK REVIEW

Pursuant to 40 Code of Federal Regulations (CFR) §58.10 Gila River Indian Community Department of Environmental Quality (DEQ) Air Program will make its annual monitoring network plan available for public inspection prior to submission to the United States Environmental Protection Agency. The Annual Ambient Monitoring Network Review and Data Summary present changes to and data collected from the air quality monitoring network. This document will also be available for review at the GRIC DEQ office located at 35 Pima Street, Sacaton, AZ 85147. Additionally, presentations will be provided at all GRIC district monthly meetings from May thru June 2014.

Public comments may be submitted in writing to GRIC DEQ Air Quality, P.O. Box 97, Sacaton, Arizona, 85147, or comments may be given orally at the scheduled community meetings. Additional information is available from GRIC DEQ Air Quality, 35 Pima Street, Sacaton, Arizona or by calling 520-562-2234.

No requests to review the document were received.

5.2 District Meeting Presentations

The AQP also presented a summary of the content of this document during one of the bi-monthly meetings for each of the seven GRIC Districts. A copy of the presentation slides is included as Appendix B. The district presentation dates along with some of the comments and questions received from the Community members at the District meetings is included in Table 5-1 below.

Table 5-1. Summary of Comments and Questions Received at District Meetings

District	Meeting Date	Comments / Questions Received
1	05/19/2014	<ul style="list-style-type: none"> • GRIC DEQ has a mobile monitoring trailer – can you monitor in areas like State Route 587 and Interstate 10 to understand more about pollution sources? Like July 17th ozone data that exceeded the standard.
2	06/02/2014	<ul style="list-style-type: none"> • How many people have asthma? • We should have more vegetation. • How can we control dust? • Farmers in field during certain times at night kick up a lot of dust. • Questions about indoor air quality - How do we prevent dust & mold from affecting the community? • A construction company was building a new house. I complained for 2-3 weeks until I called air quality then Air Quality staff came out to inspect dust problem. Thank you. • GRIC DEQ Air Quality enforcement staff should attend initial construction meeting and bi-weekly meetings during project construction activities.
3	05/20/2014	<ul style="list-style-type: none"> • What about water, shouldn't we be more focused on our water? The water here on the community is more important? • Is our air on the Community any different from the air in the city? • How about the no fly zone over the Community? There have been sightings of a military cargo plane/carrier flying over community at a very low altitude. (Around the time that the military aircraft crashed by Riggs and I10 on May9th.)
4	06/30/2014	<ul style="list-style-type: none"> • How can we assist in ensuring better air quality? • What can we do to fix the issue of dirt roads and all the dust they kick up? Issue has been mentioned multiple times, but nothing has ever been done. Community Member feels she complains about the issue too much. • What effects does crop dusting have on our air quality? • Shouldn't we be notified when applications will occur around residence? Do not like the drift and fear my residence, animals, and family are at risk.
5	06/30/2014	<ul style="list-style-type: none"> • Since the 10 years data have we seen any changes? • 1st time they were trying to include Cowtown, but DEQ worked hard not to include it. • Is DEQ air quality data consistent with surrounding entities around the valley? • An elder was very pleased with this report. He stated that he never knew nothing about this kind of data ever existed in our Community. • Is GRIC DEQ under the air quality act? • If the air quality changes what happens?

Table 5-1. Summary of Comments and Questions Received at District Meetings

District	Meeting Date	Comments / Questions Received
6	07/14/2014	<ul style="list-style-type: none">• Interest in recycling information• Question about freeway pollution – if freeway will add pollution• Is the monitoring data shared with other departments (e.g., hospital)?• School monitoring/flag program• Does the monitoring equipment breakdown ozone contributors?• How does 2013 data compare with past years?• Comment about mobile monitoring capability
7	06/16/2014	<ul style="list-style-type: none">• Is the ozone that you mentioned the same as the ozone that’s up in the atmosphere? Isn’t that what keeps out the radiation?• When the county (Maricopa) Issues “No Burn” days can they cite Community members for burning?• What about increased ozone coming from the proposed South Mountain freeway (when it is built)? We’ve always been told that air quality in D6 is bad but according to the presentation it is good.• When the EIS (for South Mountain Freeway) is complete even though we give comments, aren’t the federal agencies ultimately responsible for what happens?• When the freeway is built, will it become as bad as LA (Los Angeles)? (Smog days kids can’t play outside)• Will the EPA standards help to improve our air? Can we get a mobile air monitoring station that can check the quality of the air near the reservation boundaries in order to track what the neighbors do?• Will the proposed I-10 re-alignment (increased traffic) cause us to be in non-attainment (the proposed South Mountain Freeway)?

Appendix A

Detailed Monitoring Site Information and Photographs

- St. Johns
- Casa Blanca
- Sacaton

Table A-1. Detailed Site Information for St. Johns

Site Name	St Johns	
AQS ID	04-021-7001	
GIS Coordinates	N33 18 49.676134, W112 09 34.620808	
Location	Top of Building	
Address	4208 W. Pecos Rd Laveen, AZ	
Distance to Road	92 meters	
Traffic Count	374 (2003)	
Groundcover	Gravel	
Representative Area	St Johns, AZ	
Pollutant	Ozone	PM 10
Site Type / Objective	Population Exposure	Population Exposure
Spatial Scale	Urban	Urban/Neighborhood
Sampling Method	Teledyne-API 400E	TEOM 1400AB TEOM 1405
Analysis Method	UV photometric	Gravimetric
Instrument Manufacturer	Teledyne-API	Thermo Scientific
Start Date	7/2/2002	1/1/2013 (TEOM1400AB) 3/3/2014 (TEOM 1405)
Operation Schedule	Continuous	Continuous
Sampling Season	April-October	All year
Probe Height	4 meters	4 meters
Distance From Supporting Structure	2 meters	n/a
Distance From Obstructions On Roof	n/a	n/a
Distance From Obstructions Not On Roof	n/a	n/a
Distance from trees	n/a	n/a
Distance to Furnace or incinerator flue	n/a	n/a
Distance between collocated monitors	n/a	n/a
Unrestricted airflow	360 deg	360 deg
Probe material	Teflon	n/a
Residence time	6 sec	n/a
Will there be changes within the next 18 months	No	No
Frequency of flow rate verification for PM analyzers	n/a	Monthly
Frequency of one-point QC check (gases)	Bi-weekly	n/a
Last annual performance evaluation (gases)	4/16/2013	n/a

Table A-2. Detailed Site Information for Casa Blanca

Site Name	Casa Blanca		
AQS ID	04-021-7004		
GIS Coordinates	N33°07'06", W111°53'22'		
Location	Top of Building		
Address	Casa Blanca/ Preschool Road, Bapchule, AZ 85221		
Distance to Road	30 meters		
Traffic Count	2620 (daily average 2003)		
Groundcover	Paved/gravel		
Representative Area	Casa Blanca, AZ		
Pollutant	PM 10	PM 10	PM 10
Monitoring Objective	Population Exposure	Population Exposure	Population Exposure
Spatial Scale	Urban	Urban	Urban
Sampling Method	Low-Vol FRM	Low-Vol FRM	TEOM 1400AB TEOM 1405
Analysis Method	Gravimetric	Gravimetric	Gravimetric
Instrument Manufacturer	Rupprecht and Patashnick	Rupprecht and Patashnick	Thermo Scientific
Start Date	2002	2002	1/1/2013 (TEOM 1400AB) 9/9/2013 (TEOM 1405)
Operation Schedule	1 in 3	1 in 6	Continuous
Sampling Season	All year	All year	All year
Probe Height	5 meters	5 meters	5 meters
Distance From Supporting Structure	n/a	n/a	n/a
Distance From Obstructions On Roof	n/a	n/a	n/a
Distance From Obstructions Not On Roof	n/a	n/a	n/a
Distance from trees	n/a	n/a	n/a
Distance to Furnace or incinerator flue	n/a	n/a	n/a
Distance between collocated monitors	2-3 meters	2-3 meters	2-3 meters
Unrestricted airflow	360 deg	360 deg	360 deg
Probe material	n/a	n/a	n/a
Residence time	n/a	n/a	n/a
Will there be changes within the next 18 months	No	No	No
Frequency of flow rate verification for PM analyzers	Monthly	Monthly	Bi-weekly
Frequency of one-point QC check (gases)	n/a	n/a	n/a
Last annual performance evaluation (gases)	n/a	n/a	n/a

Table A-3. Detailed Site Information for Sacaton

Site Name	Sacaton	
AQS ID	04-021-7001	
GIS Coordinates	N33 04 52.622859, W111 44 17.067146"	
Location	Top of Building	
Address	35 Pima Street, PO Box 97, Sacaton, AZ 85147	
Distance to Road	200 meters	
Traffic Count	1122 (2003)	
Groundcover	Paved	
Representative Area	Sacaton, AZ	
Pollutant	Ozone	PM 10
Monitoring Objective	Population Exposure	Population Exposure
Spatial Scale	Urban	Urban
Sampling Method	Teledyne-API 400E	TEOM 1400AB TEOM 1405
Analysis Method	UV photometric	Gravimetric
Instrument Manufacturer	Teledyne-API	Thermo Scientific
Start Date	7/2/2002	1/1/2013 (TEOM 1400AB) 9/17/2013 (TEOM 1405)
Operation Schedule	Continuous	Continuous
Sampling Season	April-October	All year
Probe Height	4 meters	4 meters
Distance From Supporting Structure	2 meters	n/a
Distance From Obstructions On Roof	n/a	n/a
Distance From Obstructions Not On Roof	n/a	n/a
Distance from trees	n/a	n/a
Distance to Furnace or incinerator flue	n/a	n/a
Distance between collocated monitors	n/a	n/a
Unrestricted airflow	360 deg	360 deg
Probe material	Teflon	n/a
Residence time	9 sec	n/a
Will there be changes within the next 18 months	Yes	No
Frequency of flow rate verification for PM analyzers	n/a	Monthly
Frequency of one-point QC check (gases)	Bi-weekly	n/a
Last annual performance evaluation (gases)	4/29/2014	n/a

St. Johns Air Monitoring Site Photographs



Figure B7. St Johns Air Monitoring Station, view to the southwest direction.



Figure B8. St Johns Site, view to the south



Figure B9. St Johns Site, view to the south.

Casa Blanca Air Monitoring Site Photographs



Figure A-1. Casa Blanca Site, view from west side.



Figure B3. Casa Blanca Site, view to southeast direction.



Figure A-2. Casa Blanca Site, view from east side.

Sacaton Air Monitoring Site Photographs



Figure B4. Sacaton Site, east side of building.



Figure B5. Sacaton Site, north side of building.



Figure B6. Sacaton Site, top of building, southeast direction.

Appendix B

District Meeting Presentation Slides

GRIC Air Monitoring Network Review



Leroy Williams
GRIC DEQ Air Quality Program
July 14, 2014

GRIC DEQ Air Quality Program



- ▶ Permitting
- ▶ Compliance & Enforcement
- ▶ Ambient Air Monitoring

GRIC Air Monitoring Network

▶ Sacaton Site

- PM10
- Ozone

▶ Casa Blanca Site

- PM10

▶ St. Johns Site

- PM10
- Ozone

▶ Approved Quality Assurance Project Plan

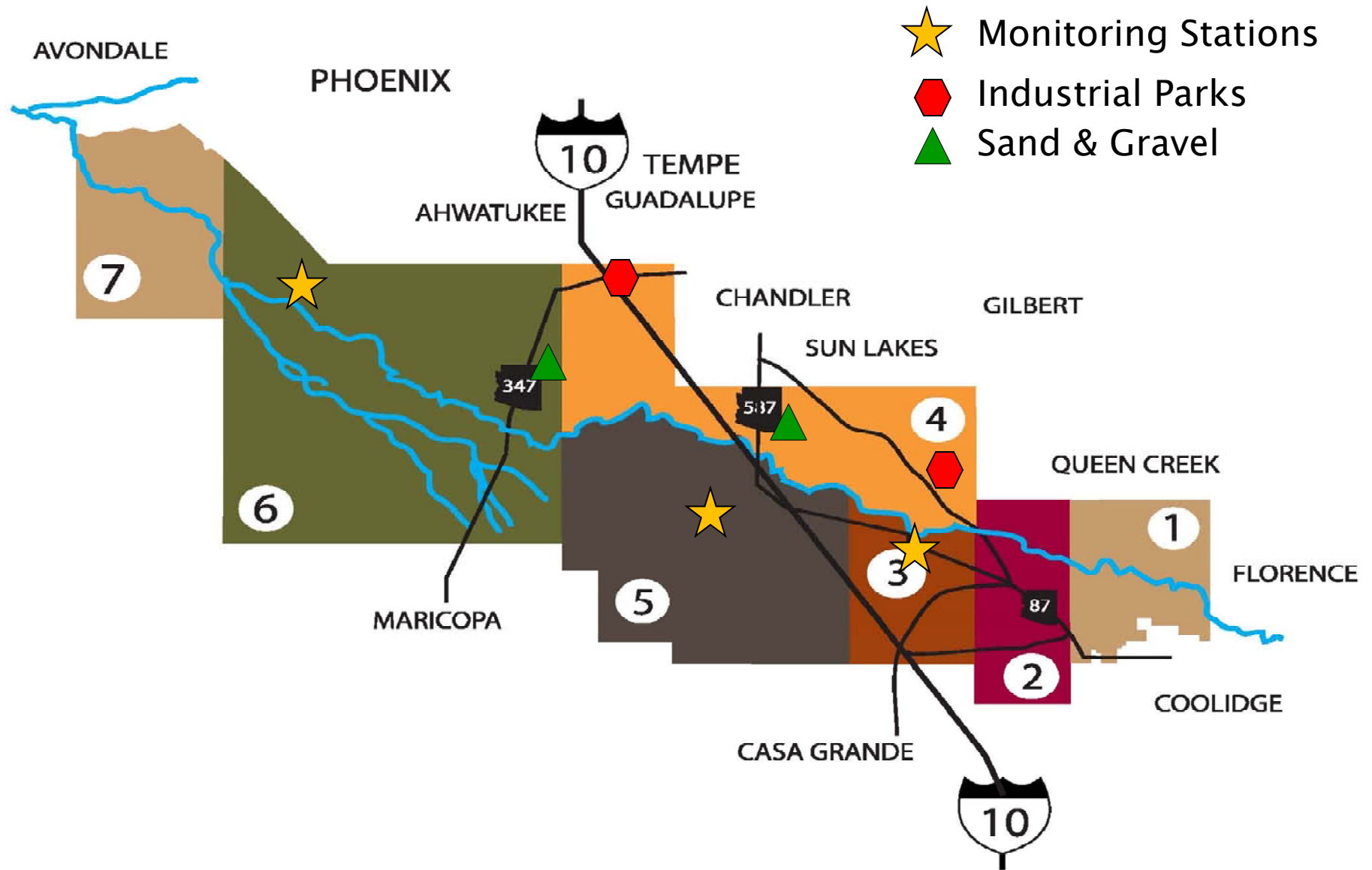
▶ Started monitoring July 2002

Weather station at all sites

- Wind direction
- Wind speed
- Ambient Temperature
- Relative Humidity
- Ambient Pressure
- Precipitation



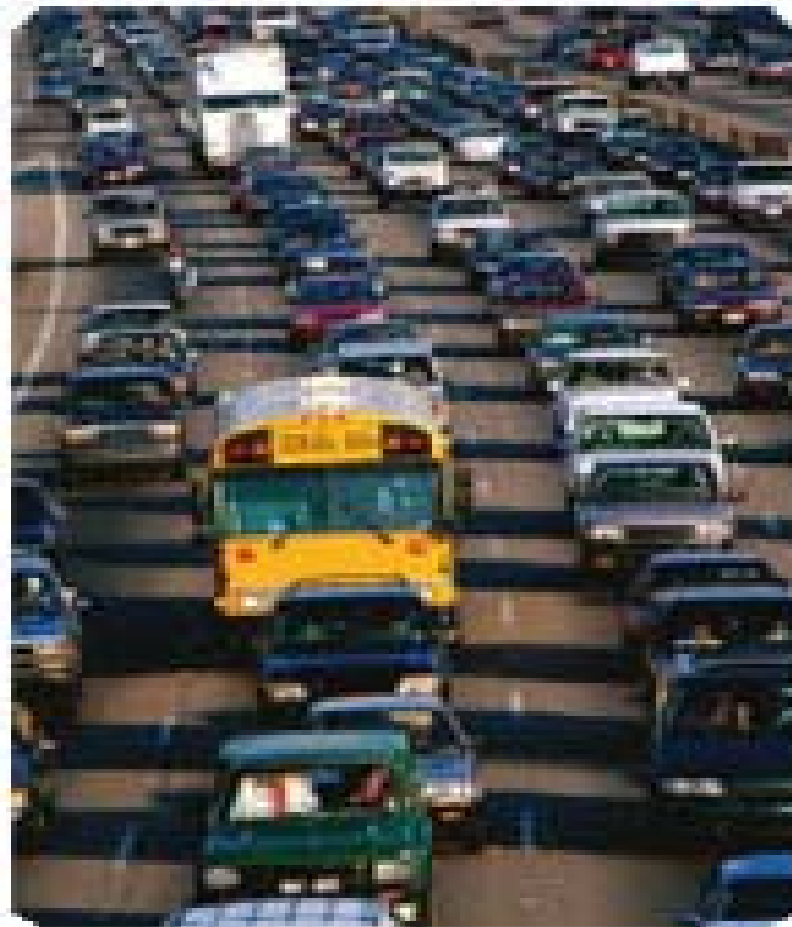
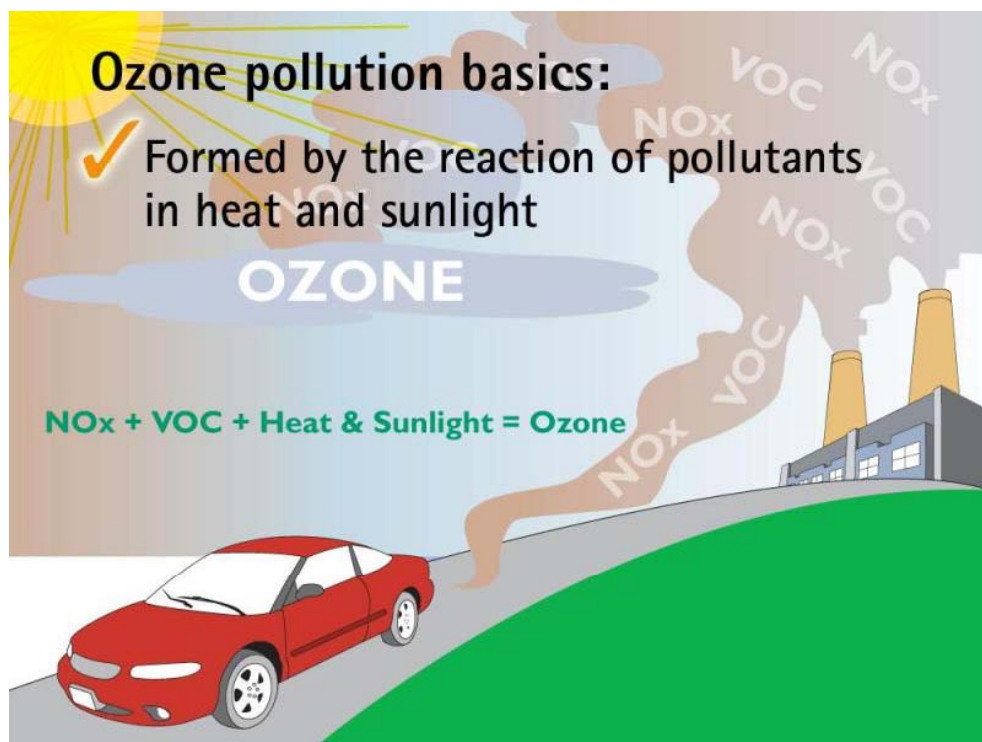
Gila River Indian Community



OZONE

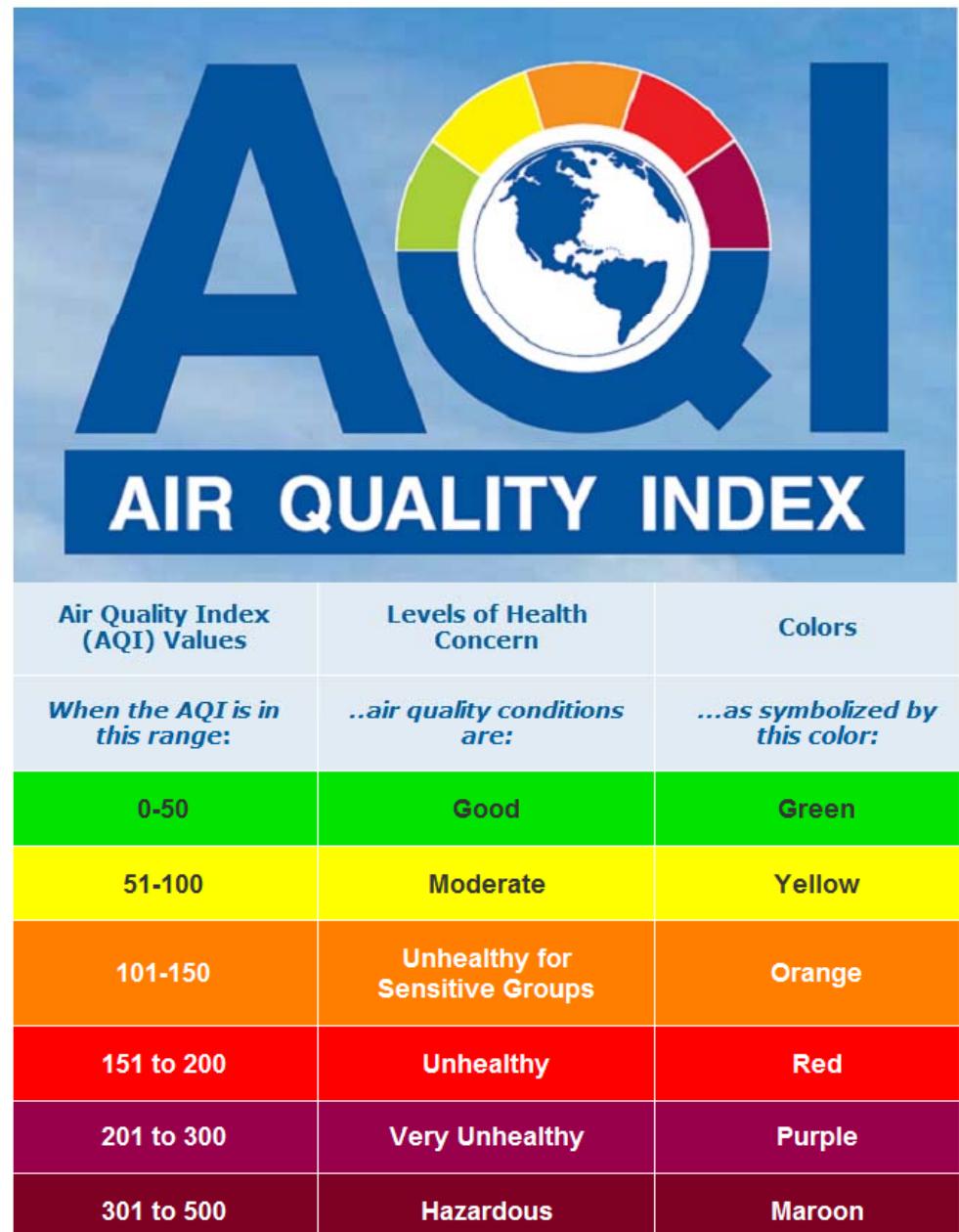
Ozone Monitoring Season starts April to October

“Ozone Pollution”



“SMOG”

GRIC Air Monitoring Data Report



GRIC 2013 Ozone Data

Sacaton Site

Apr	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
May	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Jun	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Jul	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Aug	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Sep	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Oct	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

St. Johns Site

Apr	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
May	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Jun	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Jul	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Aug	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Sep	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Oct	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

Particulate Matter (Dust) “PM10”

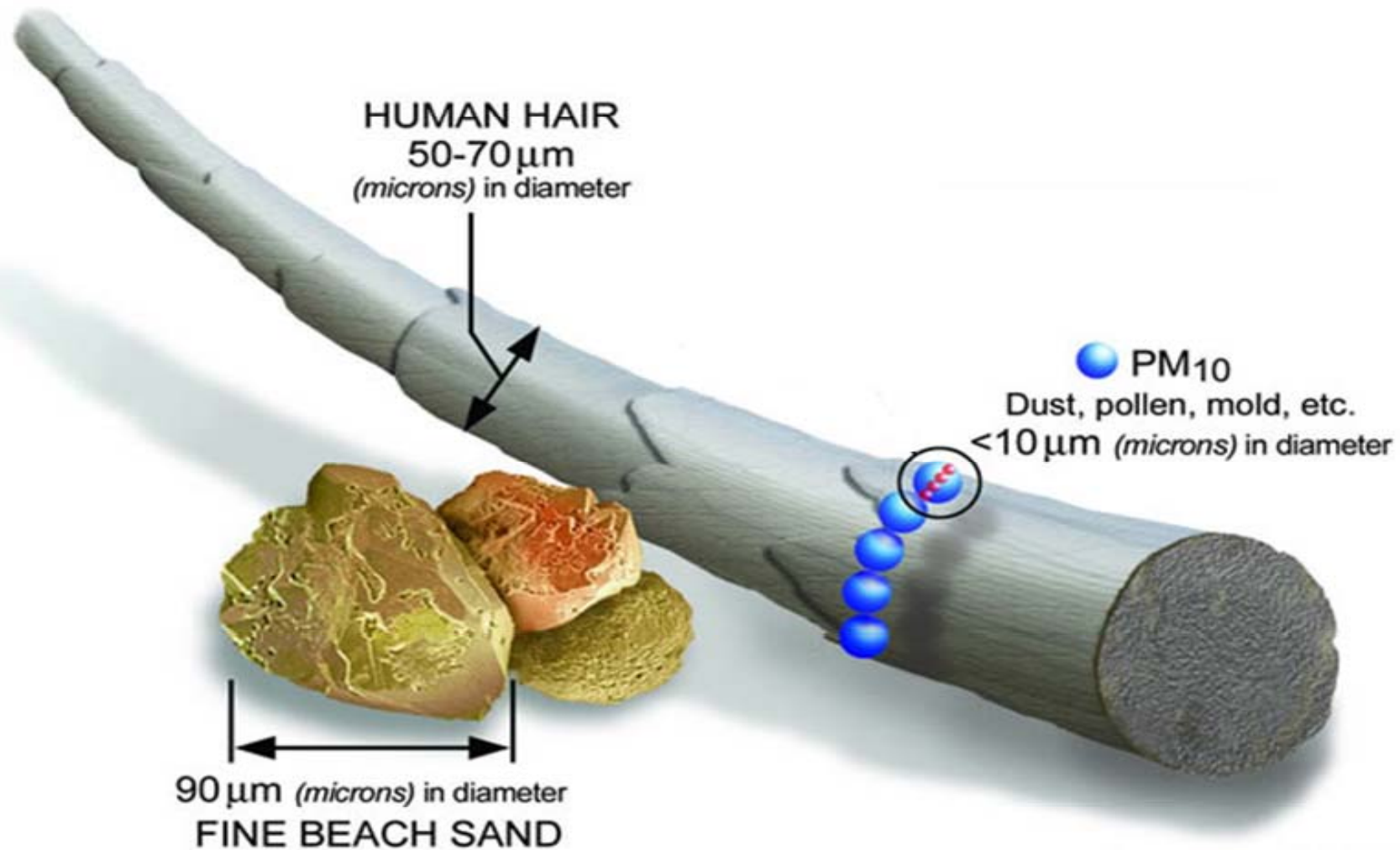
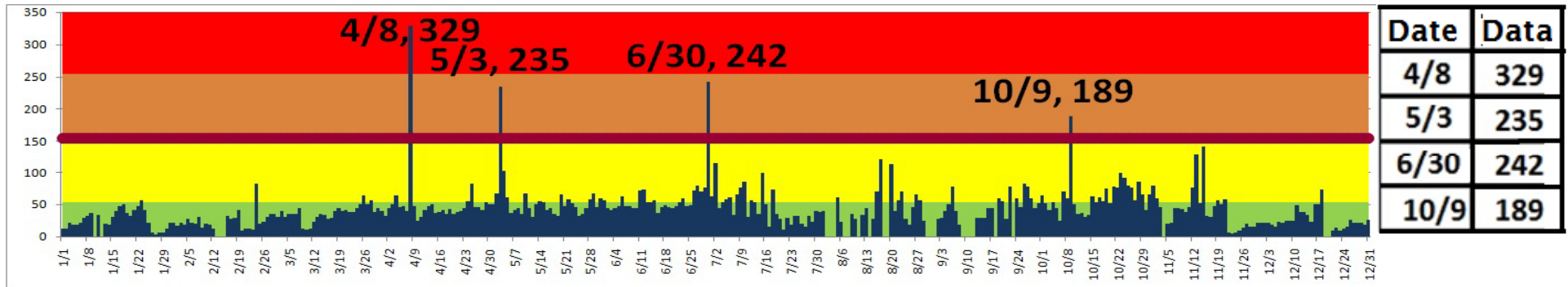


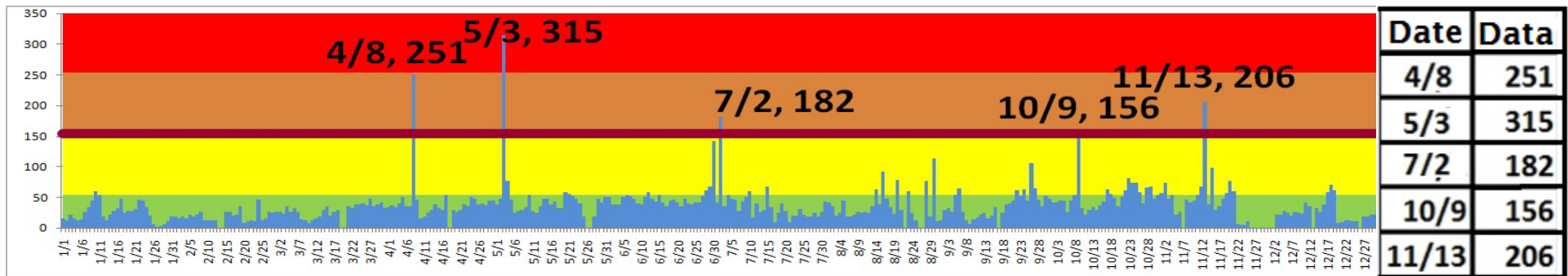
Image courtesy of the U.S. EPA

GRIC 2013 PM10 Data

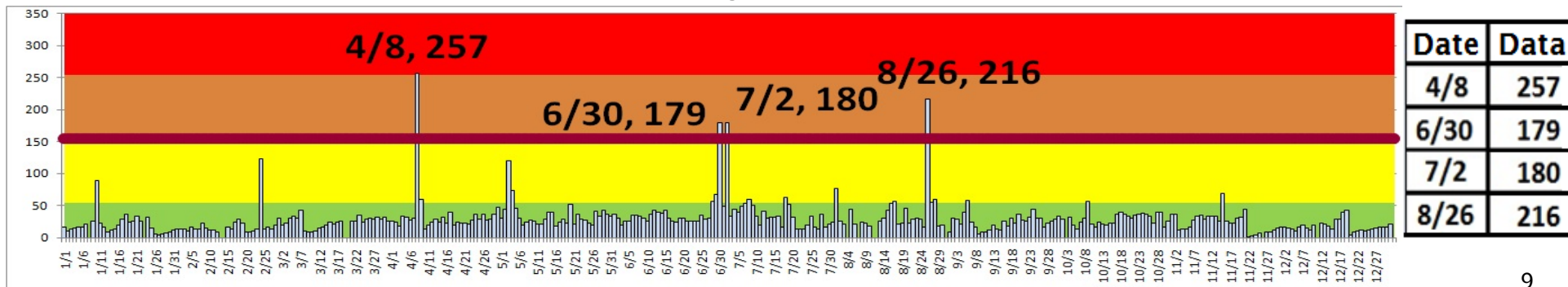
Casa Blanca Site



Sacaton Site



St. Johns Site



Gila River Indian Community Department of Environmental Quality



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